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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/544,182	10/04/2006	Klaus Habik	HAB13001/JEK	8333
23364 7590 11/05/2009 BACON & THOMAS, PLLC 625 SLATERS LANE FOURTH FLOOR ALEXANDRIA, VA 22314-1176				
EXAMINER				
CORDRAY, DENNIS R				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/544,182

**Applicant(s)**

HABIK ET AL.

**Examiner**

DENNIS CORDRAY

**Art Unit**

1791

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 June 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 and 17-47 is/are pending in the application.
- 4a) Of the above claim(s) 27-47 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 and 17-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/S508)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Response to Arguments***

1. Applicant's corrected Oath/Declaration, filed 6/25/2009, is acknowledged.
2. Applicant's arguments and amendments have overcome the rejections of Claims under 35 U.S.C. 112, 2<sup>nd</sup> paragraph. The rejections have been withdrawn.
3. Applicant's amendments have overcome the rejection of Claims under 35 U.S.C. 102(b) or 35 U.S.C. 103(a) over Kaule et al alone and the rejections of Claims under 35 U.S.C. 103(a) over Kaule et al in view of others as currently formulated. The rejections have been withdrawn. However, upon further consideration and due to the amendments, new grounds of rejection are made as detailed herein.
4. Regarding the arguments against Kaule et al and Hasegawa et al (pp 19-21), Kaule et al discloses lacquers that polymerize or crosslink under specific physical action, such as two-component adhesives and UV-curable adhesives. Although preferred, UV-curable lacquers are not required. A reference is not limited to its preferred embodiment, but must be evaluated for all of its teachings, including its teachings of non-preferred embodiments. In re Burckel, 592 F.2d 1175, 201 USPQ 67 (CCPA 1979). Any reaction lacquer that cures under a specific physical action is embodied. Hasegawa et al discloses a two component protective coating for paper that polymerizes upon drying (drying of an aqueous carrier fluid), which is a specific physical action. The coatings have elasticity, weather and chemical resistance and toughness. It would have been obvious to one of ordinary skill in the art to use the coating

composition of Hasegawa et al as the lacquer layer(s) of Kaule et al to obtain the protective advantages disclosed by Hasegawa et al.

Hasegawa et al does not disclose two lacquer layers. Kaule et al discloses a second lacquer layer to protect diffractive structures embossed in and a thin metal reflective layer applied to the lower layer. One of ordinary skill in the art would have found it obvious to use two layers formed according to Hasegawa et al for the purpose disclosed in Kaule et al.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1-15 and 17-26 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 1 recites that the lower lacquer layer is formed by a physically drying liquid lacquer layer, which becomes a solid by drying out a carrier fluid. The instant Specification recites and exemplifies only a water based or aqueous dispersion as the embodiment of the lower lacquer layer that is a physically drying lacquer layer (see pars 14, 24, 47 and 50, Example 1 and originally presented Claims 5 and 7). The liquid

lacquer layer of Claim 1, as amended, embodies lacquers having solvents or carriers other than water, which adds new matter not supported by the Specification as filed. In addition, a carrier fluid is claimed, whereas the Specification as filed makes no mention of a carrier fluid. A carrier fluid embodies compositions comprising many kinds of fluidic materials other than the disclosed water based or aqueous dispersions. One of ordinary skill in the art would not have interpreted the Specification to embody the use of a liquid lacquer layer or any carrier fluid other than the recited aqueous dispersions.

Claims 2-15 and 17-26 depend from and carry the limitations of Claim 1, thus also contain new matter.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-15 and 17-26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites that the lower lacquer layer is formed by a physically drying liquid lacquer layer, which becomes a solid by drying out a carrier fluid. The instant Specification recites and exemplifies only a water based or aqueous dispersion as the embodiment of the lower lacquer layer that is a physically drying lacquer layer (see pars 14, 24, 47 and 50, Example 1 and originally presented Claims 5 and 7). In addition, the Specification as filed makes no mention of a carrier fluid. It is not clear whether the liquid lacquer layer is the disclosed water based or aqueous dispersion or whether other

liquids are also included, such as the carrier fluid. It is also not clear if the carrier fluid is the liquid in the liquid lacquer layer, the water in the water based or aqueous dispersion, or some other carrier fluid.

Claims 2-15 and 17-26 depend from and inherit the indefiniteness of Claim 1.

***Claim Rejections - 35 USC § 102 and 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claims 1, 3, 8, 9, 13, 15, 17, 21, 24 and 26 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Kaule et al (5820971).

Claims 1, 3, 8, 9 and 26: Kaule et al discloses a security paper such as a bank note, identity card, etc., comprising a flat substrate (reference #1, Fig. 1) provided at least partly with a reaction adhesive layer or lower layer (4) contacting the substrate, a thin reflective metallized layer (3) and a UV-or chemically curable layer or upper layer of reaction lacquer (2). Adhesive layer (4) is largely chemically homogeneous with layer (2) (Abs; col 4, lines 17-38, Fig. 1). The adhesive can be a lacquer that cures under a specific physical action (physically drying) (col 3, lines 1-9 and 51-60). The lower lacquer layer contacting the substrate is shown as a smooth, contiguous layer (Fig. 1) and, where present, will close the pores of the paper and prevent dirt from accumulating thereon or, at least, one of ordinary skill in the art would have found the closed pores

and dirt repelling obvious. The upper lacquer layer is an irreversibly curable protective layer that resists physical and environmental (chemical) influences (col 4, lines 33-39; col 6, lines 1-3; col 6, line 58 to col 7, line 7, Fig. 8).

Claim 1 is a product-by-process claim. The product of Kaule et al appears to be the same as or similar to the claimed product, a security document comprising two lacquer layers, although produced by a different process. The burden therefore shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. In re Marosi, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir.1983). "In the event any differences can be shown for the product of the product-by-process claim 1 as opposed to the product taught by the reference Kaule et al, such differences would have been obvious to one of ordinary skill in the art as a routine modification of the product in the absence of a showing of unexpected results: see also In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985)" The limitations of claims 3, 8, 9 and 26 are features discussed above.

Claims 13 and 15: In some locations, the upper lacquer layer is in direct contact with the lower lacquer layer to form a largely inseparable compound (forms a highly resistant bond) (col 3, lines 9-18).

Claim 17: The two lacquer layers and thin reflective layer contain an embossed hologram (col 2, lines 32-37; col 4, lines 22-26). Holograms have optical properties that vary with the viewing angle. At least the top lacquer layer is transparent and colorless in order for the hologram to be viewed or, at least, making the top layer transparent and colorless would have been obvious to one of ordinary skill in the art.

Claim 21: The substrate can be bank note paper that has been printed on and the lower lacquer layer is applied directly to the substrate (col 5, lines 13-16).

Claim 24: In some embodiments, the lacquer layers are applied all over the substrate (col 7, lines 13-16).

8. Claims 1, 3-11, 13-15, 17, 18, 21, 24 and 26 are rejected under 35 U.S.C. 103(a) as unpatentable over Kaule et al in view of Hasegawa et al (5141983).

The disclosure of Kaule et al is used as above. Kaule et al does not disclose an aqueous dispersion for the lower lacquer layer. Kaule et al also does not disclose the chemical composition or elastic properties of the lacquer layers. Kaule et al does disclose that the lacquers polymerize or cross-link upon physical or chemical activation.

Hasegawa et al discloses aqueous coating compositions for paper. The compositions are applied as aqueous dispersions of a polyurethane resin and an acrylic copolymer which, upon drying (activated by physically drying), bond together to form a coating film (Claim 1). The compositions have elasticity, weather resistance and toughness (Abs; col 1, lines 6-19; col 2, lines 17-42). The compositions also provide resistance to chemicals (col 6, lines 53-65). In some embodiments, the polymers comprise unsaturated monomers such as styrene, thus are styrene-acrylic polyurethanes (col 5, lines 13-21). In some embodiments, the resins also comprise silane monomers, thus comprise silicones (col 5, lines 28-35). The compositions can comprise a fungicide (col 7, lines 62-66).



The art of Kaule et al, Hasegawa et al and the instant invention is analogous as pertaining to coatings used to protect paper. The goal of Kaule et al is to provide holograms as security elements that cannot be removed or physically altered. It would have been obvious to one of ordinary skill in the art to use aqueous styrene-acrylic polyurethanes as the lacquer coatings in the paper of Kaule et al in view of Hasegawa et al to obtain the toughness, weatherability and chemical resistance disclosed by Hasegawa et al. The coatings are elastic, thus will provide the claimed avoidance of forming cracks. It would further have been obvious to include a fungicide as a typical coating additive.

Regarding Claim 14, Kaule et al discloses that the metallized layer can additionally be provided with a protective layer that is chemically homogeneous with layer 2 (col 5, lines 5-8). The additional protective layer lies between the lower and upper layers.

9. Claim 2 is rejected under 35 U.S.C. 103(a) as unpatentable over Kaule et al in view of Hasegawa et al and further in view of Howland et al (5928471).

The disclosures of Kaule et al and Hasegawa et al are used as above. Kaule et al and Hasegawa et al do not disclose cotton paper.

Howland et al teaches that cotton is the preferred fiber for bank notes (col 5, lines 34-43).

The art of Kaule et al, Hasegawa et al, Howland et al and the instant invention is analogous as pertaining to security paper used for bank notes. It would have been

obvious to one of ordinary skill in the art to use cotton paper as the substrate of the paper of Kaule et al in view of Hasegawa et al and further in view of Howland et al as the preferred paper for bank notes.

10. Claims 12, 19 and 20 are rejected under 35 U.S.C. 103(a) as unpatentable over Kaule et al in view of Hasegawa et al and further in view of Gerlier et al (6715750).

The disclosure of Kaule et al and Hasegawa et al are used as above. Kaule et al and Hasegawa et al do not disclose adjusting the upper lacquer layer to obtain predetermined smoothness, sound and/or flexural stiffness.

Gerlier et al teaches that a problem in cut sheet dispensers such as automated teller machines is the accidental dispensing of multiple sheets. One mechanism by which the dispensers operate is by establishing a differential friction between an actuating mechanism and the first and subsequent sheets. A second mechanism involves buckling the top sheet to remove it from the stack (col 1, lines 8-28). Thus, the frictional resistance between bank notes, which is in part due to the smoothness of the sheets, and the flexural stiffness of the bank notes are important features to control.

The art of Kaule et al, Hasegawa et al, Gerlier et al and the instant invention is analogous as pertaining to paper used for bank notes. It would have been obvious to one of ordinary skill in the art to control the composition of the lacquer coatings and their thickness to the claimed range to obtain a predetermined smoothness and flexibility in banknotes made from the paper of Kaule et al in view of Hasegawa et al and further in view of Gerlier et al to ensure accurate dispensing in automated machines.

11. Claim 25 is rejected under 35 U.S.C. 103(a) as unpatentable over Kaule et al in view of Hasegawa et al and further in view of Tooth et al (4462866).

The disclosure of Kaule et al and Hasegawa et al are used as above. Kaule et al and Hasegawa et al do not disclose a lacquer layer on both sides of the paper.

Tooth et al discloses a security paper that can be used to make bank notes (Abs; col 3, lines 62-64). The document contains a security element, which may lie in a watermark, thus providing multiple security elements (col 3, lines 6-24). The paper can comprise an overlay in the form of a film that can cover the security element or can extend over the whole of one or more surfaces of the sheet. The overlay can be applied as a liquid which is physically dried and/or cured to form a film (col 3, lines 37-61). The overlay prevents the embedded elongate security element from becoming detached and, when extending over the whole sheet, provides protection for the sheet or, at least, such protection would have been obvious to one of ordinary skill in the art.

The art of Kaule et al, Hasegawa et al, Tooth et al and the instant invention is analogous as pertaining to coatings used to protect paper. It would have been obvious to one of ordinary skill in the art to apply a lacquer over both surfaces of the paper of Kaule et al in view of Hasegawa et al and further in view of Tooth et al to protect the entire paper.

12. Claims 22 and 23 are rejected under 35 U.S.C. 103(a) as unpatentable over Kaule et al in view of Hasegawa et al and further in view of Suss (6059914) and even further in view of Tooth et al.

The disclosure of Kaule et al and Hasegawa et al are used as above. Kaule et al and Hasegawa et al do not disclose a gap in the lacquer layer or an additional security element therein. Kaule et al does disclose applying a hologram by transferring it from a carrier material (col 2, lines 38-41; col 3, lines 19-29).

Suss discloses a method of transferring a hologram to a paper by producing a stamping foil having a decorative layer (i.e.-a hologram) provided on a carrier film only in a region-wise manner corresponding to the desired patterning of the substrate (Abs; col 2, lines 44-63). Multiple discrete hologram elements can be applied to a substrate (col 3, lines 7-11; col 7, lines 49-59, Fig. 3).

Suss does not disclose security elements between the hologram elements forming the pattern.

The disclosure of Tooth et al is used as above.

The art of Kaule et al, Hasegawa et al, Suss, Tooth et al and the instant invention is analogous as pertaining to security elements used in paper. It is well known in the art (such as in the paper of Tooth et al) to incorporate multiple security elements in security papers to make forgery difficult. It would have been obvious to one of ordinary skill in the art to apply multiple discrete hologram elements (thus forming gaps between the elements and their corresponding lacquer layers) to the paper of Kaule et al in view of Hasegawa et al and further in view of Suss and even further in view of Tooth et al to

make forgery of the paper more difficult. It would further have been obvious to incorporate the holograms in a watermark, which forms an additional security element in the gaps, to further hinder duplication of the paper.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **DENNIS CORDRAY** whose telephone number is (571)272-8244. The examiner can normally be reached on M - F, 7:30 -4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dennis Cordray/  
Examiner, Art Unit 1791

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